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## **Injuries to Tank Crews**

### **A Guide to the Data-base and the Data Forms**

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## Summary

This guide is annex A to the volumes of the report "Injuries to Tank Crews", reference YR4373. Its purpose is to describe the data-base and to explain the various forms used to record data on the fate of tanks that were hit or sustained damage in action and the injuries received by their crews.

A copy of the data-base, in dBase III Plus format, is in a wallet attached to this annex.

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## **Introduction**

1. This is an annex to a series of volumes of a report entitled "Injuries to Tank Crews", reference YR4373, which were commissioned by the US Department of the Army. It has been produced by the Centre for Operational Research and Defence Analysis (CORDA Ltd) as part of Task 5 of Contract 06T90011 from BDM International Inc in support of US Army Laboratory Command contract DAAL02-88-D-0013, Delivery Order D0017.

2. At the time of writing (Mar 91), the following volumes have been produced:

Volume I: 13 cases in the Western Desert, 1941

Volume II Parts 1 - 5: 90 cases in the Western Desert, 1942

Volume III Parts 1 - 5: 71 cases in the Western Desert, 1941-42

Volume IV Part 1: 9 cases in Burma in 1945.

The series will be extended at a later date if funds become available.

3. Each volume consists of a number of cases, each of which relates to an individual tank that was hit by the enemy or otherwise damaged in action during the 1939-45 war. Each case is recorded in a standard manner on six forms. The data in the forms are stored in a data-base, from which the forms were printed.

4. The aim of this annex is to describe the data-base in detail and to explain the data forms used to record each case in the volumes listed. After a review of the definitions used in this document, the data forms referred to in paragraph 3 are described and examples given of each. Details are given next of the data-base itself (which is contained in the wallets attached to this annex). The annex is concluded with a list of the data sources on tank and tank crew casualties discovered to date, a note about tank marks, and a list of abbreviations and terms employed with their meanings.

## **Definitions**

5. The following definitions are used in this report to describe the forms on which casualty data was recorded in the study:

Case One tank that was hit or damaged in action. If the same tank was hit more than once during the same battle, these other hits form part of the same case. If the same tank was hit on another occasion, such as for instance another day, then this forms a separate case.

Field On each form there are a number of headings in bold type. By or under each heading is a field containing data. These fields correspond to fields in the data-base.

## The Data Forms

6. This section describes the fields used in the data forms. It complements the data dictionary (paragraphs 13-20) which describes each of the fields in the data-base in the order in which they occur. There are six data forms and a sub-section describes each. Each sub-section is in two parts. The first part consists of three columns. Column 1 contains the heading. Column 2 describes the contents of the field, while column 3 contains the name of the fields in the data base in which the information is stored. The names of fields and files in the data base are given in italics, with the file names in brackets. Thus *(TkCrInjs)* *Yard\_ref* refers to field "Yard\_ref" in file "TkCrInjs". The second part of each sub-section is a sample data form.

### Form 1

7. Form 1 contains as complete a set of information as is available concerning the identity of the tank. It also contains the data on the damage sustained by the tank and the severity of personnel casualties that happened inside.

<u>Serial Number</u>	This is the serial number assigned to the case by CORDA. Each case has a unique serial number. This serial number is in the form "B2/001" - case 001 of series B2.	<i>(TkCrInjs)</i> <i>Yard_ref</i>
<u>Original Serial Number</u>	The serial number given to the case in one of the source documents.	<i>(TkCrInjs)</i> <i>Serial_num</i>
<u>Series</u>	The data series to which the cases belong. A case may belong to more than one data series. Paragraph 21 describes the data series referenced.	<i>(TkCrInjs)</i> <i>Series</i>
<u>Theatre</u>	The theatre of war in which this case took place.	<i>(TkCrInjs)</i> <i>Theatre</i> This is actually stored as a numeric code.
<u>Tank type</u>	The type of tank that was hit.	<i>(TkCrInjs)</i> <i>Tank_type</i> This is actually stored as a numeric code.
<u>Mark</u>	The mark of tank hit. (See paragraphs 22-23.)	<i>(TkCrInjs)</i> <i>Mark</i>
<u>Number in Crew</u>	The number of crew-men in the tank at the time it was hit	<i>(TkCrInjs)</i> <i>Crsize</i>
<u>Regiment</u>	The regiment to which the tank belonged.	<i>(TkCrInjs)</i> <i>Regiment</i> This is actually stored as a numeric code.
<u>Squadron/Troop</u>	The squadron and/or troop to which the tank belonged.	<i>(TkCrInjs)</i> <i>Sqn_troop</i>

<u>Tank ID</u>	The identifier of the tank hit, usually either the tank's name and number, or the name of its commander on that day.	(TkCrInjs) Id
<u>Date</u>	The date on which the tank was hit.	(TkCrInjs) Date_gb
<u>Photographs</u>	Any references to photographs of the damaged tank.	(TkCrInjs) Photo_nos
<u>Figures</u>	Any references to drawings or plans of the damaged tank.	(TkCrInjs) Fig_number
<u>Range</u>	The range at which the tank was hit in yards. Notes on the range at which the tank was hit.	(TkCrInjs) Range (TkCrInjs) Rng_notes
<u>Cause of damage</u>	The cause of damage to the tank, for instance "AP penetration".	(TkCrInjs) Dmg_cause
<u>Weapon responsible</u>	The weapon responsible for hitting or damaging the tank.	(TkCrInjs) Wpn_resp
<u>Fire damage</u>	The fire damage to the tank.	(TkCrInjs) Fire_dmg
<u>Position of hit</u>	The position of the hit(s) on the tank.	(TkCrInjs) Pos_of_hit
<u>Damage</u>	The damage done to the tank.	(TkCrInjs) Damage
<u>Remarks</u>	Remarks on the damage done to the tank.	(TkCrInjs) Rmrks_dmg
<u>Summary of Casualties to Crew</u>	For each crew member in the tank at the time it was hit, the rôle of the crew-man (Rolecr1), the severity of his injuries received in the tank (Spfatecr1), and notes which mention any injuries he received after leaving the tank (Outfate1). The severity of injuries have been categorised according to the Shephard-Perkins (SP) classification.	(TkCrInjs) Rolecr1 (TkCrInjs) Spfatecr1 (TkCrInjs) Outfate1 If (TkCrInjs) Spfatecr1 is blank and (TkCrInjs) Ftcr1 is "?" or "*" then "Unknown" or "Unknown*" is printed instead of (TkCrInjs) Spfatecr1.  (TkCrInjs) Rolecr2, (TkCrInjs) Spfatecr2, (TkCrInjs) Outfate2 and (TkCrInjs) Ftcr2 relate to crew member 2, and so forth up to crew member 7.
	Remarks on the fate of any of the crew.	(TkCrInjs) Remfate

**Sample Form 1**

<b>Serial Number</b> D3/061 <b>Original Serial Number</b> Card 61 <b>Series</b> D3 <b>Theatre</b> N Africa	<b>Tank Type</b> Grant <b>Mark</b> Grant I <b>Number in Crew</b> 6
<b>Regiment</b> Queen's Bays <b>Squadron/Troop</b> 1 Tp. C Sqn <b>Tank ID</b> Lieut Radice's tank. <b>Date</b> 27 May 1942	
<b>Photographs</b> <b>Figures</b>	
<b>Range</b> Not known	
<b>Cause of Damage</b> AP shell (penetration?) <b>Weapon Responsible</b> Gun. . . <b>Fire Damage</b> Not known. <b>Position of Hit</b> Not known.	
<b>Damage</b> Not known. Two of crew killed, three wounded.	
<b>Remarks</b>	
<b>Summary of Casualties to Crew (incurred while operating tank)</b>	
<b>Commander</b>	SI-Ser
<b>Gunner</b>	K
<b>Loader/Operator</b>	Ser
<b>Driver</b>	K
<b>75 mm Gunner</b>	SI-Ser
<b>75 mm Loader</b>	Uninjured

## Form 2

8. Form two is repeated for each crew-man in the tank at the time of the incident. It contains all the information known about each crew-man. Any injuries suffered by crew-men inside the tank have been classified according to the Shephard-Perkins scheme.

<u>Serial Number</u>	This is the serial number assigned to the case by CORDA. Each case has a unique serial number. This serial number is in the form "B2/001" - case 001 of series B2.  Next to the serial number is the tank ID, its troop and or squadron and regiment.	(TkCrInjs) Yard_ref  This is a composite of the following fields: (TkCrInjs) Id (TkCrInjs) Sqn_troop (TkCrInjs) Regiment The regiment is stored in the data base as a numeric code.
<u>Fate of (Crew-man)</u>	This field is in bold and gives the rôle of the crew member in question.  What is recorded as happening to the crew member. This includes his injuries, how he exited from the tank and what happened to him afterwards. If either his name or what he was wearing were recorded in the source then these are also recorded here.	(CrewInj) Role  (TkCrInjs) Fate_cr1 (TkCrInjs) Fate_cr2 relates to crew member 2, and so forth up to crew member 7.
<u>Shephard Perkins Classification</u>	The Shephard Perkins classification of injuries 1 to 2, listed in order of seriousness as assessed by Air Vice Marshal Perkins and his remarks on each of them. The Shephard Perkins classification of casualties is described in the introduction to each of the volumes.	(CrewInj) Inj1_regio (CrewInj) Inj1_type (CrewInj) Inj1_sever (CrewInj) Inj1_remar These are stored in the above fields for injury 1, in similar fields Inj2_regio etc for injury 2, through to injury 8.
<u>Medical Opinion</u>	Air Vice Marshal Perkins' remarks on the overall injuries suffered by the crew member in question.	(CrewInj) Wp_remarks

## Sample Form 2

Serial Number D3/061	Lieut Radice's tank 1 Tp. C Sqn Queen's Bays			
<b>Fate of Loader/Operator</b>				
Shell wound right ankle.				
<b>SP Classification of Injuries (in descending order of severity)</b>				
No	Body Region	Type	Severity	Remarks
1	Vd	C2	Ser	Right - see notes.
2				
3				
4				
5				
6				
7				
8				
<b>Medical Opinion</b>				
Type of wound not specified but minimum shell wound is probably "deep laceration", and any ankle wound caused by a shell has to be "serious" in terms of SP index.				
<b>Fate of Driver</b>				
Killed.				
<b>SP Classification of Injuries (in descending order of severity)</b>				
No	Body Region	Type	Severity	Remarks
1			K	
2				
3				
4				
5				
6				
7				
8				
<b>Medical Opinion</b>				
Nothing known of severity of injuries.				

### Form 3

9. Form 3 contains the time and place that the tank was hit, together with data on the forces involved and their intentions.

<u>Serial Number</u>	This is the serial number assigned to the case by CORDA. Each case has a unique serial number. This serial number is in the form "B2/001" - case 001 of series B2.  Next to the serial number is the tank ID, its troop and or squadron and regiment.	(TkCrInjs) Yard_ref  This is a composite of a number of fields and is fully explained in the subsection on form 2.
<u>Weather</u>	The weather at the time of the incident.  Remarks on the weather.	(TkCrInjs) Weather  (TkCrInjs) Rmrks_wthr
<u>Time</u>	The time at which the tank was hit. If two numbers are given then this indicates that the tank was hit or damaged during that period.	(TkCrInjs) Earliest (TkCrInjs) Latest If the value in these two fields is identical then only one value is printed on the form.
<u>Terrain</u>	The terrain the tank was in when the incident took place.	(TkCrInjs) Terrain
<u>Map</u>	The standard reference of the map of the area in which the incident took place. The maps referenced are in wallets at the back of Part 1 of each volume.	(TkCrInjs) Map
<u>Map reference</u>	The map reference to the place where the tank was when hit or damaged.	(TkCrInjs) Map_ref
<u>Visibility</u>	Visibility in yards at the time the tank was hit. Additional information on this may be under weather.	(TkCrInjs) Visibility
<u>Allied force</u>	The allied force that participated in the action of which this case formed part.	(TkCrInjs) Allied_frc
<u>Enemy force</u>	The enemy force that participated in the action of which this case formed part.	(TkCrInjs) Enemy_frc
<u>Allied plan</u>	The allied plan at the time of the engagement.	(TkCrInjs) Allied_pln
<u>Enemy plan</u>	The enemy plan at the time of the engagement.	(TkCrInjs) Enemy_pln

### Sample Form 3

Serial Number	D3/061	Lieut Radice's tank. 1 Tp. C Sqn Queen's Bays
Weather	Hot and dry.	
Time	1718 - 1810	
Terrain	Desert	
Map	1:250,000 Egypt and Cyrenaica sheets 2 and 3	
Map Reference		
Visibility	Poor.	
Allied Force	<p>The size of the British force consisted of the Queen's Bays and 9 L and was approximately 89 x tanks. 2 x Coys Infantry and 3 x Btys Fd guns.</p> <p>At the start of the day the strength of the Bays was approximately as follows:</p> <ul style="list-style-type: none"> <li>RHQ, two Crusader 2pr, two Crusader Close Support.</li> <li>A Sqn, ten Crusader 2pr, three Crusader Close Support.</li> <li>B Sqn, eight Crusader 2pr, three Crusader Close Support, two Stuarts.</li> <li>C Sqn, twelve Grants, three Stuarts.</li> </ul> <p>Since then they lost a Tp of two or three Stuarts.</p> <p>9 L was comprised as follows (though A and C Sqns together had four less Crusaders than shown):</p> <ul style="list-style-type: none"> <li>RHQ, four Crusaders.</li> <li>A Sqn, fifteen Crusader 2pr, two Crusader Close Support.</li> <li>B Sqn, twelve Grants, one Crusader Close Support, two Stuarts.</li> <li>C Sqn, thirteen Crusader 2pr, two Crusader Close Support.</li> </ul> <p>Both the Bays and 9L each had under command a battery group consisting of a Bty of 11 (HAC) RHA and a Coy 1 RB. The Bty of 11(HAC) RHA which was under the command of 10 H was also in support.</p>	
Enemy Force	Forty enemy tanks, supported by a considerable number of ATk guns, including four 88mm DP guns, and presumably some infantry.	
Allied Plan	<p>The Bays, 10 H and 9 L belonged to 2 Armd Bde which was ordered to discover how far east the enemy extended and if possible to deliver a flank attack from the east.</p> <p>The Bde was formed up on B 743 388409 facing south, with 10 H leading, the Bays on the right and 9 L on the left. The direction of any advance was to be 180 degrees (due south). Between 1200 and 1400 the Bays had been engaged with the enemy (see D3/071 and D3/074). 9 L and 10 H were ordered to halt and prepare to go into action in support of the Bays, the direction of their attack was intended to be 290 degrees. At 1400, 10 H was moved on to the Bays' left flank and 9 L on to the right. At 1645, the Bays and 9 L were ordered to attack the mass of enemy to their front (ie the west), while 10 H watch the southern flank. Both the Bays and 9L formed up in a line with B sqn in the centre, the RHQ behind. A Sqn on the right and C Sqn on the left.</p>	
Enemy Plan	Not known.	

#### Form 4

10. Form 4 describes the engagement in which the tank was hit and the part that the tank played in the engagement.

<u>Serial Number</u>	This is the serial number assigned to the case by CORDA. Each case has a unique serial number. This serial number is in the form "B2/001" - case 001 of series B2.  Next to the serial number is the tank ID, its troop and or squadron and regiment.	(TkCrInjs) <i>Yard_ref</i>
<u>Description of action</u>	This describes the battle in which the incident took place. The account given describes the action such that the circumstances in which the tank was damaged can be understood. These accounts of battles should not be used for battle analysis as they are incomplete and do not take sufficient account of other units' and arms' view of the battle.  It should be noted that the times quoted are taken from the war diaries quoted in the sources (see the sub-section on form 6). The times in war diaries are either the times at which the information reached the author of the war diary (the adjutant) or the times at which the events occurred.	(TkCrInjs) <i>Gen_action</i>
<u>Description of this tank's part in the action</u>	A description of this tank's part in the action.	(TkCrInjs) <i>Tk_action</i>

## Sample Form 4

Serial Number D3/061	Lieut Radice's tank. 1 Tp. C Sqn Queen's Bays
<b>Description of Action</b> Before orders were given for the attack, the Grants of 9 L (and the Bays) together with the three Btys of 25prs shelled the mass of enemy vehicles for about 20 minutes, producing columns of black smoke, which suggested that the shelling had a useful effect. 1645 Received orders for attack. 1718 The attack went in under cover of smoke from the close support Crusaders and supported by three Btys of 25prs. 1718 - 1810 The attack was successful and the enemy overrun. Enemy gunners were driven from their guns, though some managed to return to them. Some of our tanks drove through the line of enemy guns. A number of our tanks were knocked out, including this one. Two were towed away for repair soon after being knocked out (time not known). Two truck loads of 75mm ammunition were brought up, and the Grants, who had used almost all that they carried, were replenished on the spot. 1810 The advance continued on a line of bearing of 350 degrees, the Bays leading, 10 H on the left level with the Bays and 9 L on the right slightly to the rear. Shortly after 1810, B Bty 11 RHA (which was under the command of 10 H) reported that they could see a group of fifty enemy soft vehicles which they could engage over open sights. As a result of this shoot a number of enemy transport vehicles were destroyed, though it was not possible to take any prisoners. 2100 The Bde leaguered around B 743.	
<b>Description of this Tank's Part in the Action</b> This tank was the Tp leader's tank for 1 Tp C Sqn the Bays and was knocked out between 1718 and 1810 when the Bays and 9 L overran the enemy position.	

## Form 5

11. Form 5 contains what is known about the casualties suffered by both sides, the reparability of the tank, and the tanks objectives at the time it was hit.

<u>Serial Number</u>	This is the serial number assigned to the case by CORDA. Each case has a unique serial number. This serial number is in the form "B2/001" - case 001 of series B2.	(TkCrInjs) <i>Yard_ref</i>
	Next to the serial number is the tank ID, its troop and or squadron and regiment.	This is a composite of a number of fields and is fully explained in the sub-section on form 2.
<u>Reparability</u>	Whether the tank continued with its activity after being hit or damaged, whether it was repaired in the field, removed or abandoned.	(TkCrInjs) <i>Repairblty</i> This is actually stored as a numeric code.
<u>Remarks</u>	Remarks on the reparability of the tank.	(TkCrInjs) <i>Rmrks_reps</i>
<u>Tank objectives at time of hit</u>	What the tank was trying to do at the time it was hit.	(TkCrInjs) <i>Tank_obj</i>
<u>Allied casualties</u>	The casualties both to material and personnel suffered by the allied force (or the part of the allied force that this tank was in) during the action. The remarks on the description of the action in the sub-section describing form 4 are pertinent to this field.	(TkCrInjs) <i>Allied_cas</i>
<u>Enemy casualties</u>	The casualties suffered by the enemy force during the action. The remarks on the description of the action in the sub-section describing form 4 are pertinent to this field.	(TkCrInjs) <i>Enemy_cas</i>

### Sample Form 5

Serial Number	D3/061	Lieut Radice's tank. 1 Tp. C Sqn Queen's Bays
Reparability		
Remarks		
Tank Objectives at Time of Hit		
<b>Allied Casualties</b> 2 Armd Bde claimed to have lost two Grants and four Crusaders. However, between them, the Bays and 9 L claim to have lost two Grants and seven Crusaders. It is probable that the discrepancy was caused by some casualties, like D3/100, driving away and ending up in odd places. The Bays lost two Grants (D3/061 and D3/062) and three Crusaders (D3/063 and two others). 9 L lost four Crusaders, all belonging to A Sqn (D3/100 and three others). Two of the 9 L Crusaders were hit and towed away. D3/100 drove away. What the other one did is not recorded.		
<b>Enemy Casualties</b> Between 1718 and 1810 the German position was overrun. Many drivers and gunners were killed. Two hundred and fifty Germans and Italians were taken prisoner. Twelve "large guns" were destroyed, including four 88mm DP guns. Shortly after 1810 some enemy transport vehicles were destroyed.		

## **Form 6**

12. Form 6 is the final data form. It contains any general remarks on the case and a list of the sources used in compiling the case.

<u>Serial Number</u>	This is the serial number assigned to the case by CORDA. Each case has a unique serial number. This serial number is in the form "B2/001" - case 001 of series B2.	(TkCrInjs) <i>Yard_ref</i>
	Next to the serial number is the tank ID, its troop and or squadron and regiment.	This is a composite of a number of fields and is fully explained in the sub-section on form 2.
<u>Remarks</u>	General remarks on points of interest about the case and miscellaneous information.	(TkCrInjs) <i>Gen_rmrks</i>
<u>Sources</u>	The sources used in compiling the case.	(TkCrInjs) <i>Sources</i>

## Sample Form 6

Serial Number	D3/061	Lieut Radice's tank, 1 Tp. C Sqn Queen's Bays
Remarks		
Sources	<ul style="list-style-type: none"><li>1) Report entitled "Casualties in AFVs" by Maj AL Chute RCAMC dated 20 July 1942, based on card 61 filled out by medical staff at a British hospital in respect of the 37mm loader/operator's injuries and by the 37mm loader/operator concerning the injuries suffered by the rest of the crew and the damage to the tank.</li><li>2) War Diary 2 Armd Bde.</li><li>3) War Diary 22 Armd Bde.</li><li>4) War Diary Queen's Bays.</li><li>5) War Diary 9 L. This war diary erroneously claims that the attack was made in conjunction with 3 CLY, and not by the Bays. This claim is contradicted by the other war diaries. 9 L's war diary also suggests that the attack took place soon after 1200.</li><li>6) War Diary 10 H.</li><li>7) War Diary 3 CLY.</li></ul>	

## Data Dictionary

13. This section describes the fields in the data-base. The data-base is in dBBase III plus format. A copy of this data-base is in the wallets attached to this annex. The information on the cases is stored in the following four files:

- TkCrInjs.dbt
- TkCrInjs.dbf
- Crewinj.dbt
- Crewinj.dbf

For all practical purposes the two files whose name begins "TkCrInjs" are one data file, since they cannot be used independently. Similarly the two files whose name begins "Crewinj" can be treated as one data file. The files which end "dbf" hold all the data fields except the "memo" fields. ("Memo" fields are explained in paragraph 14.) The "memo" fields are held in the files which end in "dbt".

14. The data-base employs the following five types of fields:

**Character** This type of field may contain numbers, characters and punctuation marks. It has a defined length, for instance "Character\*80" is a character field containing up to 80 numbers, characters and punctuation marks. It is possible to do sorts and selections on character fields and to search for words inside them.

**Numeric** This type of field contains a number. It also has a defined length, for instance "Numeric\*2.0" is a numeric field two digits long with no decimal places (an integer). All of the numeric fields used are integers. Some numeric fields contain quantifiable data such as a range in yards, others contain numeric codes. For instance tank type 11 is a Grant. In the field for range, positive integers indicate the range, negative integers are codes for "unknown" (-1) and "not applicable" (-2). It is possible to sort and select on numeric fields.

**Date** Date fields contain the date, which is stored in the American format mm/dd/yy, but can be displayed in whatever format is required. On the data forms, dates have been displayed in words to avoid confusion. It is possible to sort and select on date fields.

**Logical** Data in a logical field indicates either true or false. Note that if the field contains no data this is equivalent to false. It is possible to sort and select on logical fields.

**Memo** Memo fields may contain numbers, characters, punctuation marks and end of paragraph markers and have

unlimited length. They may not be sorted or searched on. They may only be displayed.

15. The data-base has been designed to facilitate analysis of the data according to codifications specified by the user. All the user should do is to create a new field in which he will enter his codification. He should then design an output layout to display the new field along with the fields containing the data on which he wishes to make his codification. The data-base contains all the information that is in the data forms in the printed volumes. The user should print out the output layout, codify the data and then enter his codification into the new field. To check the data he should then reprint the new output layout, which will contain his codification alongside the data from which it was derived.

16. The data-base in its current form only permits up to seven crew-men per tank and eight injuries per crew-man. This was sufficient for the data extracted. If in the future cases are discovered in which there were more than seven crew-men in a tank, or where it is possible to classify more than eight injuries suffered by a single crew-man, then the data-base will be modified accordingly.

#### **Files TkCrInjs.dbf and TkCrInjs.dbt**

17. These two files contain all of the data in the data-base except that data on Form 2 which relates to the classification of injuries received by individual crew members. As mentioned before, for all intents TkCrInjs.dbf and TkCrInjs.dbt are merely two parts of the same data file and contain the fields listed below.

18. The fields have been listed in the order that they appear when using the browse facility of dBase III. The name of each field is in bold type. It is followed by the type of field (for instance "Character\*10"), and then a description of the field. The contents of the field are listed below the description. This has only been done for fields for which there is a limited variation of the contents. Where field contents consist of a numeric code, the meaning of the code has been put alongside the code. The wording of the meaning is that printed on the data forms.

**Yard\_ref** - Character\*10 - Serial number of case assigned by abstracter.

**Series** - Character\*50 - Data series to which case belongs (see paragraph 15)

B1, B2  
B2  
D1  
D2  
D2, D3  
D3  
DM

**Theatre** - Numeric\*2.0 - The theatre in which the incident took place.

- 1 Other
- 2 N W Europe
- 3 Italy
- 4 N Africa
- 5 Burma
- 6 Syria

**Tank\_type** - Numeric\*2.0 - The type of tank in the case. ("Gun nk" stands for gun not known.)

- 1 Other
- 2 Cruiser Mk I (A9)
- 3 Cruiser Mk II (A10)
- 4 Cruiser Mk III (A13)
- 5 Cruiser Mk IV (A13 Mk2)
- 6 Challenger (A 30)
- 7 Churchill
- 8 Comet
- 9 Cromwell
- 10 Crusader
- 11 Grant
- 12 Lee
- 13 Light tank
- 14 Matilda (A12)
- 15 Sherman 75mm
- 16 Sherman 17pr
- 17 Sherman (gun nk)
- 18 Stuart
- 19 Tetrarch
- 20 Valentine

**Serial\_num** - Character\*50 - The serial number given to the case in one of the source documents.

**Mark** - Character\*26 - The mark of tank in the case (see paragraphs 22-23). The "?" indicates uncertainty.

- Cruiser Mk IV
- Cruiser Mk IVa
- Cruiser Mk VI
- Cruiser Mk VI CS or Vla CS
- Cruiser Mk VI or Vla
- Cruiser Mk Vla
- Grant I
- Infantry Mk II
- Infantry Mk IIa
- Infantry Mk IIa\*
- Infantry Mk IIa\* ?
- Infantry Mk III

Lee I  
Sherman V  
Stuart I

**Id** - Character\*40 - The name, number or other way of identifying the tank.

**Regiment** - Numeric\*2.0 - The battalion or regiment to which the tank belonged.

1	Other	
2	RSG	Royal Scots Greys
3	1 IDG	1 Irish Dragoon Guards
4	4/7 DG	4/7 Dragoon Guards
5	2 WG	2 Welsh Guards
6	2 GG	2 Grenadier Guards
7	1 CG	1 Coldstream Guards
8	2 IG	2 Irish Guards
9	2 RGH	2 Royal Gloucestershire Hussars
10	8 H	8 Kings Royal Irish Hussars
11	10 H	10 Royal Hussars
12	13/18 H	13/18 Hussars
13	15/19 H	15/19 Hussars
14	23 H	23 Hussars
15	3 CLY	3 County of London Yeomanry
16	4 CLY	4 County of London Yeomanry
17	3/4 CLY	3/4 County of London Yeomanry
18	2 F&F	2 Fife and Forfar Yeomanry
19	(Not allocated)	
20	(Not allocated)	
21	1 RTR	1 Royal Tank Regiment
22	2 RTR	2 Royal Tank Regiment
23	3 RTR	3 Royal Tank Regiment
24	5 RTR	5 Royal Tank Regiment
25	6 RTR	6 Royal Tank Regiment
26	8 RTR	8 Royal Tank Regiment
27	42 RTR	42 Royal Tank Regiment
28	44 RTR	44 Royal Tank Regiment
29	4 RTR	4 Royal Tank Regiment
30	51 RTR	51 Royal Tank Regiment
31	11 HAC RHA	11 (Honorable Artillery Company) RHA
32	Queen's Bays	Queen's Bays
33	7 RTR	7 Royal Tank Regiment
34	5 Horse	5 (Probyn's) Horse
35	9 R Horse	9 Royal Deccan Horse
36	116 RAC	116 (Gordon Highlanders) RAC
37	Unknown	Unknown
38	7 H	7 Hussars
39	NIH	Northern Irish Horse
40	9 L	9 Queen's Royal Lancers

**Date\_gb** - Date - The date on which the incident occurred.

**Photo\_nos** - Character\*20 - The reference numbers of any photographs of the tank.

**Fig\_number** - Character\*20 - The reference numbers of any diagrams of the tank.

**Range** - Numeric\*5.0 - The range at which the tank was hit.

-2 Not applicable

-1 Not known

The range in yards at which the tank was hit.

**Rng\_notes** - Character\*80 - Notes on the range at which the tank was hit.

**Dmg\_cause** - Character\*80 - The cause of the damage to the tank.

**Fire\_dmg** - Character\*30 - Whether there was any fire damage to the tank.

**Wpn\_resp** - Character\*80 - The weapon responsible for damaging the tank.

**Pos\_of\_hit** - Memo - The position of the hit on the tank.

**Damage** - Memo - The damage done to the tank.

**Rmrks\_dmg** - Memo - Remarks on the damage to the tank.

**Kill\_type** - Character\*5 - The type of kill inflicted on the tank as assessed by the abstracter. Two points must be stressed about this classification of tank damage. An F kill implies that, although the tank could no longer fire its main armament, it was still mobile. In other words, the crew were still physically capable of driving the tank - though whether they remained in their tank to do so or would have been willing to do so is another matter. Likewise with M kills. Secondly, the classifications of tank damage are assessments made by the abstracter based on information contained in the data-base concerning the damage to the tank and injuries suffered by the crews. They are only intended as a guide for quick reference. They are not intended as a substitute for the more complete information given in each case. The contents of this field are not displayed on any of the data forms but appear in index 1 of each volume.

- Tank not killed, though it may have been damaged
- F Tank can no longer fire its main armament
- F/K Tank has suffered either an F or a K kill
- K Tank can no longer fire its main armament or move: a "catastrophic kill"
- M Tank can no longer move
- M/F Tank has suffered either an F or an M kill
- U It is uncertain what kind of kill the tank has suffered, or even whether it has suffered a kill.

**Fate\_cr1** - Memo - The fate of crew member 1.

**Fate\_cr2** - Memo - The fate of crew member 2.

**Fate\_cr3** - Memo - The fate of crew member 3.

**Fate\_cr4** - Memo - The fate of crew member 4.

**Fate\_cr5** - Memo - The fate of crew member 5.

**Fate\_cr6** - Memo - The fate of crew member 6.

**Fate\_cr7** - Memo - The fate of crew member 7.

**Repairbility** - Numeric\*2.0 - Whether the tank continued its activity after being hit or damaged, whether it was repaired in the field, removed or abandoned.

- 1 No data entered
- 2 Carried on
- 3 Repaired in the field
- 4 Removed
- 5 Abandoned
- 6 Other

**Rmrks\_reps** - Memo - Remarks on the reparability of the tank.

**Weather** - Character\*20 - What the weather was like.

**Rmrks\_wthr** - Memo - Remarks on what the weather was like.

**Earliest** - Character\*5 - The earliest time at which the tank could have been damaged.

**Latest** - Character\*5 - The latest time at which the tank could have been damaged.

**Sqn\_troop** - Character\*20 - The squadron and troop to which the tank belonged.

**Map\_ref** - Character\*10 - The grid reference of the location where the tank was damaged.

**Map** - Character\*80 - The name of the map or maps of the area of the incident.

**Terrain** - Character\*40 - The type of terrain in which the incident took place.

Open and flat, in front of a village.

Burmese village

Open and flat.

Desert

Aerodrome in desert

Desert, undulating ground

**Visibility** - Character\*40 - The visibility in yards at the time the tank was hit.

**Allied\_frc** - Memo - The allied force.

**Enemy\_frc** - Memo - The enemy force.

**Allied\_pln** - Memo - The allied plan.

**Enemy\_pln** - Memo - The enemy plan.

**Tank\_obj** - Memo - The tank's objective at the time it was hit.

**Gen\_action** - Memo - A description of the action in which the tank was hit.

**Tk\_action** - Memo - A description of the tank's part in the action.

**Allied\_cas** - Memo - Allied casualties in the action.

**Enemy\_cas** - Memo - Enemy casualties in the action.

**Gen\_rmk**s - Memo - General remarks on the case.

**Sources** - Memo - The sources used.

**Idcr1** - Character\*10 - An identifier for the first crew-man. (This consists of the serial number with "a" added to it.) Fields Idcr1 to Idcr7 are used for cross-referencing with files Crewinj.dbt and Crewinj.dbf and are not displayed on any of the data forms.

**Idcr2** - Character\*10 - An identifier for the second crew-man. (This consists of the serial number with "b" added to it.)

**Idcr3** - Character\*10 - An identifier for the third crew-man if any. (This consists of the serial number with "c" added to it.)

**Idcr4** - Character\*10 - An identifier for the fourth crew-man if any. (This consists of the serial number with "d" added to it.)

**Idcr5** - Character\*10 - An identifier for the fifth crew-man if any. (This consists of the serial number with "e" added to it.)

**Idcr6** - Character\*10 - An identifier for the sixth crew-man if any. (This consists of the serial number with "f" added to it.)

**Idcr7** - Character\*10 - An identifier for the seventh crew-man if any. (This consists of the serial number with "g" added to it.)

**Ftcr1** - Character\*3 - A code for the fate of the first crew-man. Except where the first character is "\*" or "?" the first character represents the fate of the crew-man in the tank. The second, his fate while baling out, and the third his fate after bailing out. "K" stands for killed, "I" for injured and "U" for uninjured. The contents of this field are not displayed on any of the data forms. Data form 1 uses this field if the fate of the crew-man is unknown and there is therefore no entry in field (TkCrInjs) Spfatecr1.

\* The fate of this crew-man is unknown - but the fate of some-one who may have been this man is given elsewhere in the data-base

? Not known

IUI Injured in the tank and injured again after bailing out

IUK Injured in the tank, killed after bailing out

IUU Injured in the tank, no injuries received afterwards  
K Killed in the tank  
UUI Uninjured in the tank but injured after bailing out  
UUK Uninjured in the tank but killed after bailing out  
UUU Uninjured

**Ftcr2** - Character\*3 - A code for the fate of the second crew-man, see above.

**Ftcr3** - Character\*3 - A code for the fate of the third crew-man, see above.

**Ftcr4** - Character\*3 - A code for the fate of the fourth crew-man, see above.

**Ftcr5** - Character\*3 - A code for the fate of the fifth crew-man, see above.

**Ftcr6** - Character\*3 - A code for the fate of the sixth crew-man, see above.

**Ftcr7** - Character\*3 - A code for the fate of the seventh crew-man, see above.

**Rolecr1** - Character\*30 - The rôle the first crew-man played in the tank.

Commander  
Gunner  
Loader/Operator

**Rolecr2** - Character\*30 - The rôle the second crew-man played in the tank.

Driver  
Gunner  
Loader/Operator  
Operator

**Rolecr3** - Character\*30 - The rôle the third crew-man played in the tank.

Blank  
Driver  
Loader/Operator  
Operator

**Rolecr4** - Character\*30 - The rôle the fourth crew-man played in the tank.

Blank  
Driver

**Rolecr5** - Character\*30 - The rôle the fifth crew-man played in the tank.

Blank  
Co-driver  
Driver, Gunner or Operator  
75 mm Gunner  
Supernumerary

**Rolecr6** - Character\*30 - The rôle the sixth crew-man played in the tank.

Blank  
75 mm Loader

**Rolecr7** - Character\*30 - The rôle the seventh crew-man played in the tank.

Blank

Auxiliary Wireless Operator

**Crsize** - Numeric\*2.0 - The number of men in the tank at the time of the incident.

**Spfatecr1** - Character\*7 - The severity of the sum of the injuries suffered by the first crew-man assessed according to the SP index

Blank

K

Ser

Sl

Sl-Ser

Sl-Sl,

Sl,

Sl-Sl,

Sl,

Sl-Sl,

Sl,

Sl-Ser

**Spfatecr2** - Character\*7 - The severity of the sum of the injuries suffered by the second crew-man assessed according to the SP index (choices as above).

**Spfatecr3** - Character\*7 - The severity of the sum of the injuries suffered by the third crew-man assessed according to the SP index (choices as above).

**Spfatecr4** - Character\*7 - The severity of the sum of the injuries suffered by the fourth crew-man assessed according to the SP index (choices as above).

**Spfatecr5** - Character\*7 - The severity of the sum of the injuries suffered by the fifth crew-man assessed according to the SP index (choices as above).

**Spfatecr6** - Character\*7 - The severity of the sum of the injuries suffered by the sixth crew-man assessed according to the SP index (choices as above).

**Spfatecr7** - Character\*7 - The severity of the sum of the injuries suffered by the seventh crew-man assessed according to the SP index (choices as above).

**Outfate1** - Character\*50 - The fate of the first crew-man after leaving the tank and any notes.

**Outfate2** - Character\*50 - The fate of the second crew-man after leaving the tank and any notes.

**Outfate3** - Character\*50 - The fate of the third crew-man after leaving the tank and any notes.

**Outfate4** - Character\*50 - The fate of the fourth crew-man after leaving the tank and any notes.

**Outfate5** - Character\*50 - The fate of the fifth crew-man after leaving the tank and any notes.

**Outfate6** - Character\*50 - The fate of the sixth crew-man after leaving the tank and any notes.

**Outfate7** - Character\*50 - The fate of the seventh crew-man after leaving the tank and any notes.

**Remfate** - Memo - Remarks on the fate of any of the crew.

**Volume** - Character\*10 - The volume and part of volume in which the case is contained. This field was used in the printing of indexes and is not displayed on the data forms.

### **Files CrewinJ.dbf and CrewinJ.dbt**

19. These two files contain the data on the SP classification of injuries that is reproduced on form two. The only other information on the injuries suffered by individual crew-men is the data in fields (TkCrInjs)Fate\_cr1/2/3/4/5/6/7.

20. The fields are listed in the order that they appear when using the "browse" facility of dBase III. The name of each field is in bold type. It is followed by the type of field (for instance "Character\*10"), and then a description of the field. The contents of the field are listed below the description. This has only been done for fields for which there is a limited variation of the contents.

**Tk\_Id** - Character\*10 - Serial number of case assigned by abstracter [this is the same as (TkCrInjs)Yard\_ref]. This field is not used by the data forms but is used for cross-referencing with files TkCrInjs.dbt and TkCrInjs.dbf.

**Id** - Character\*10 - The identifier for the crew-man [this is the same as (TkCrInjs)Idcr1/2/3/4/5/6/7 - it will be the same as Tk\_Id with an "a" on the end if the crew-man is the first crew-man, a "b" on the end for the second crew-man and so forth]. This field is not used by the data forms but is used for cross-referencing with files TkCrInjs.dbt and TkCrInjs.dbf.

**Role** - Character\*30 - The rôle in the tank off the crew-man [this is the same as the (TkCrInjs)Rolecr1/2/3/4/5/6/7].

- Auxiliary Wireless Operator
- Commander
- Co-driver
- Driver
- Gunner
- Loader/Operator
- Operator
- Supernumerary
- 75mm Gunner
- 75mm Loader

**Fate** - Memo - Not used.

**Shfate** - Character\*3 - A code for the fate of the crew-man. [This is the same as (TkCrInjs)Ftcr1/2/3/4/5/6/7. Except where the first character is "\*" or "?" the first character represents the fate of the crew-man in the tank. The second, his fate while baling out, and the third his fate after bailing out. "K" stands for killed, "I" for injured and "U" for uninjured.] The contents of this field are not displayed in the data forms.

- \* The fate of this crew-man is unknown - but the fate of some-one who may have been this man is given elsewhere in the data-base
- ? Not known
- IUI Injured in the tank and injured again after bailing out
- IUK Injured in the tank, killed after bailing out

IUU Injured in the tank, no injuries received afterwards  
K Killed in the tank  
UUI Uninjured in the tank but injured after bailing out  
UUK Uninjured in the tank but killed after bailing out  
UUU Uninjured

**Categorise** - Logical - Whether the casualty's injuries have been categorised according to the SP index. (This will be blank/false if the crew-man was not injured in the tank or if his fate is unknown.) The contents of this field are not displayed in the data forms.

**Already** - Logical - Set to true if this crew-man is already in the data-base for this case. (In a few cases the injuries suffered by one of the crew are known, but the rôle played by the crew-man is not known - such crew-men appear twice in the data-base. An example of this is case D1/009.) The contents of this field are not displayed in the data forms.

**Inj1\_region** - Character\*5 - The SP classification of the region of the most serious injury suffered by the crew-man. (The SP classification system is explained in the introduction to all volumes of the report.)

Ia  
Ib  
Ic  
Id  
Ie  
If  
IIa  
IIb  
IIc  
IIIa  
IIIb  
IIIc  
IIId  
IVa  
IVb  
IVc  
IVd  
Va  
Vb  
Vc  
Vd  
Xa  
Xb  
Xc  
Blank

**Inj1\_type** - Character\*5 - The SP classification of the type of the most serious injury suffered by the crew-man.

A  
B

C  
C<sub>1</sub>  
C<sub>2</sub>  
D  
D<sub>1</sub>  
D<sub>1</sub>-D<sub>2</sub>  
D<sub>2</sub>  
D<sub>2</sub>-D<sub>3</sub>  
D<sub>3</sub>  
E<sub>0</sub>  
E<sub>1</sub>  
E<sub>2</sub>  
F<sub>1</sub>  
F<sub>2</sub>  
G  
H  
I  
J  
L  
*Blank*

**Inj1\_sever** - Character\*7 - The SP classification of the severity of the most serious injury suffered by the crew-man - All injuries should have a severity grading.

K  
Ser  
Sl  
Sl-K  
Sl-Ser  
Sl-Sl<sub>1</sub>  
Sl<sub>1</sub>  
Sl<sub>1</sub>-Sl<sub>2</sub>  
Sl<sub>2</sub>  
Sl<sub>2</sub>-Sl<sub>3</sub>  
Sl<sub>3</sub>  
Sl<sub>3</sub>-Ser  
*Blank*

**Inj1\_remar** - Memo - Remarks on the most serious injury suffered by the crew-man.

The above four items are repeated sequentially to cater for up to eight different injuries to a crew-man (ie up to Inj8\_remar).

**Wp\_remar** - Memo - Remarks on the injuries suffered by the crew-man

### Data Series

21. The following sources of useful data have been discovered to date; sources referenced below with a "B" refer to Burma, "D" to North Africa,

"E" to North West Europe and "I" to Italy (though I2 also contains North African data). One case equals one tank.

- D1 **Report on burns due to enemy action suffered by AFV personnel**, by Maj A L Chute of 1 Medical Research Section GHQ MEF, dated 11 May 42. This report contains data on 13 cases in which tank crew-men received burns as a result of hits received by their tanks in North Africa. In six of the cases Maj Chute interviewed one of the survivors.
- D2/D3 **Report on casualties in AFVs**, by Maj A L Chute, dated 20 July 42. This report contains two sources of data on tank crew casualties in North Africa. D2 contains data on 112 cases that Maj Chute obtained through interviewing members of the tank crews of 8 Hussars and the squadron commanders of 3 and 4 County of London Yeomanry. D3 consists of 124 casualty cards filled in at hospitals. Some of these cards relate to casualties received by the tank crews while outside their tanks and so are not relevant to this study. Other cards contain information on cases contained in D2. D3 contains data on 68 cases not contained in D2, where it is known that the tank crew were in their tank. In some of those cases, several cards relate to one tank. Most of the cases in D2 and D3 relate to Crusaders, Grants and Stuarts.
- D4 **Observations on problems affecting AFV personnel**, by Maj Chute, dated 21 Dec 42 (BPC 43/199). This report contains data on 85 cases in North Africa obtained by Maj Chute from regimental medical officers. Many of the cases relate to Shermans. (While Wright and Harkness refer to D1 and D2/D3 in "A survey of casualties amongst armoured units in North West Europe" (E1 - see below), they were apparently unaware of both this report and D5.)
- D5 **Vision Devices in Armour Fighting Vehicles**, by Maj Chute, dated 31 August 42. 1 MRS Report 33. This report contains data on 64 cases. All were Matildas or Valentines (Infantry tanks Mk II and III). They belonged to 23 Armd Bde and occurred in a battle on 22 July 42. Maj Chute obtained his data from interviews with tank crews. This report also contains a small amount of information on the use of vision devices in tanks.
- D6 **Report on Visit to Western Desert and Libya Area of Operations 17 Dec 41 - 6 Jan 42**, by Lt Col J A Barlow and Maj R D Neville, dated 22 Jan 42. This report contains the results of the examination of each of the 31 tanks at Sidi Rezegh and four cases each derived from an interview with a member of the crew.
- I1 **Examination of tank casualties**, by Maj J G Wallace of 1 ORS (Report 1/21) This contains data on forty one cases in Italy in mid 1944. Most of the data were recorded by the units themselves and is duplicated in source I2. Twenty two of the cases refer to Churchills, the rest to Shermans, Stuarts and German tanks.

- I2    **The war diaries of 51 RTR and the Northern Irish Horse.** Together these contain data on an estimated 100 cases, of which 37 are also recorded in I1. The data relates to three periods, one in Tunisia in 1943 and two different periods in Italy in 1944. Unusually, the war diaries contain diagrams of damage to each tank. The data was recorded primarily with the damage to the vehicle in mind, but it ought to be possible to extract data on crew casualties for many of the cases. Most of the cases are of casualties to Churchills. MORU report 19, "A survey of tank casualties", used these war diaries for data on tank casualties in Italy, but the authors either did not obtain or were unaware of the data on tank casualties in Tunisia in the 1943 war diaries.
- B1    **Crew casualties and tank battle damage sustained by 255 Indian Tank Brigade (Feb - May 1945).** This report contains data on 102 cases in Burma. This report is quoted in MORU report 19, "A survey of tank casualties", as containing "all the details of all the Brigade personnel and vehicle casualties during the period." This is not so. It probably contains all the major tank casualties suffered by Probyn's Horse and the Royal Deccan Horse during the time as well as those for 116 RAC for that part of the time that the unit was part of 225 Indian Tank Brigade. It also contains many of the minor tank casualties but not all (see B2 below). The major deficiency of this report is that it does not contain the dates on which casualties occurred. All 102 cases refer to Shermans.
- B2    **The war diaries of Probyn's Horse, Royal Deccan Horse and 116 RAC.** contain data on an estimated 200 - 300 cases in Burma, between February and May 1945. 116 RAC's war diary is particularly useful. One hundred and two of these are also recorded in B1. All the cases refer to Shermans.
- E1    **A survey of casualties amongst armoured units in North West Europe,** by Capt H B Wright and Capt R D Harkness of the Medical Research Council Team attached to 2 ORS, HQ 21 Army Group. This report is well known and contains 333 cases in North West Europe, mostly involving Shermans, Cromwells and Comets in 1945.
- E2.    **The distribution of casualties amongst the crews of Cromwells and Shermans,** by Wright and Harkness (1 MRS Report 1/45). This report is also well known and contains data on 79 cases involving Cromwells and Shermans in North West Europe from June 1944 to January 1945. Since these cases are not dated, it would be more practical to extract cases from the war diaries and match the cases extracted to the cases in this report, than to attempt to date the cases. This report lists whether crew members were killed, wounded or burnt in their tanks. There is no data on the injuries received.
- E3.    **Casualties among tank crews in 11 Armoured Division in Operation Veritable,** by Wright and Harkness (1 MRS Report 3/45). This

report is well known and contains 26 cases in North West Europe in 1945, most of which were Shermans.

### Tank Marks

22. British tank nomenclature during the Second World War is confusing. The mark of tank is recorded in the way that it was recorded in the original documents. For instance an A12 Matilda with a Besa MG and two 95 hp Leyland diesel engines was recorded in the originals as an Infantry Mk IIa\*, and has been so recorded. (Such a vehicle could also be described as a Matilda III.) In the introduction to each volume there is a description of all the marks of all the tanks relevant to the data in the volume.

23. One caution should be mentioned. Where a tank is described as an Infantry Mk IIa, it is clear that an Infantry Mk IIa is meant. But where a tank is described as an Infantry Mk II, the person giving the data may have meant that it was an Infantry Mk II as opposed to an Infantry Mk III (and thus may have been a Mk II, a Mk IIa, a Mk IIa\* or a Mk IIa\*\*) or he may have meant that it was genuinely a Mk II. This same caution applies to Infantry Mk IIIs and Cruiser Mk VIIs.

### Abbreviations and Terms

24. The following abbreviations and terms have been used:

AA	Anti-aircraft
ADMS	Assistant Director Medical Services - the head of medical services for an Armd Div
A Echelon	Administrative echelon (those vehicles belonging to the battalion or Armd Regt which were readily available to resupply the fighting troops in action. See B Echelon.)
AFV	Armoured fighting vehicle
AFV (T)	part of GHQ MEF responsible for providing advice and research on AFVs as vehicles. Note that the responsibility for tanks was divided between AFV (T) who were vehicle specialists and SD5 who were weapon specialists.
AGRA	Army Group Royal Artillery
Amb	Ambulance
AORG	Army Operational Research Group
AP	Armour piercing (a type of ammunition. AP shot was also known as "solid shot". Note that AP shot was a tracer round.)
APC	Armour piercing capped (a type of ammunition. The cap aided penetration, particularly against hard faced armour.)
APCBC	Armour piercing capped ballistic capped (as APC but with a ballistic cap to reduce air resistance thus maintaining the velocity to a greater distance.)

APHE	Armour piercing high explosive (an armour piercing shell, sometimes known as SAP)
arty	artillery
att	attached
ATk	Anti-tank
Baluchs	Baluchistan Regiment. An infantry regiment in the Indian Army
B	a point on a map - in the war diaries of May and June 1942 points are referred to as for instance B.230 and Pt 230 almost interchangeably. In the war diary of 1 RTR for 10 June 42 "B.230" is referred to as "Barrel 230". It is known that 8th Army sometimes placed single barrels on the ground to mark locations.
Bays	Queen's Bays (an armoured regiment)
Bde	Brigade
B Echelons	Back up echelon (those vehicles belonging to the battalion or Armd Regt that were neither with the fighting troops nor with the A echelon. The B echelon was normally in the Bde administrative area.)
Besa	a type of machine gun, often used in British tanks.
BLOCKHOUSE	BLOCKHOUSE was the code-name for point B.653.
Bn	Battalion
box	a static defensive position usually held by an infantry brigade with artillery attached. Troops in Bde boxes were dug in behind mines and barbed wire. KNIGHTSBRIDGE box which was held by 201 Gds Bde until 14 June 42 was 3500 yds by 2800 yds.
BPC	Body Protection Committee (of the Medical Research Council)
Browning	A type of machine gun
Bty	Battery
B vehicle	an unarmoured transport vehicle attached to an armoured unit usually for logistic purposes
Capt	Captain
CB	Counter battery

centre line	a line going from the middle of the start line to the objective of an attack. Also known as the axis of an advance. If a unit was to move to its final objective by way of a number of intermediate objectives, the centre line could be described in terms of the centre of the unit's current location, followed by its intermediate objectives (in the order in which they were to be reached) and its final objective.
Chaung	A stream bed
CLY	County of London Yeomanry
CMO	Counter mortar organisation
CO	Commanding officer
Col	Colonel
Comd	Commander
Coy	Company
Cpl	Corporal
crock	strictly speaking an old or broken down horse. Used as slang for an old or broken down tank
Det	Detachment
DF	Defensive fire
Div	Division
Fd	Field
FGA	Fighter ground attack aircraft
FOO	Forward observation officer
Fus	Fusiliers
HI Bty	The name of a particular gun battery
Gds	Guards
GHQ	General Headquarters
GR	Gurkha Rifle (for instance 4/5 GR was the 4th Battalion of the 5th Gurkha Rifles regiment)
GSW	Gun shot wound (Note that gun shot wounds are not necessarily inflicted by small arms ammunition - they may be inflicted by any small, fast moving penetrating body, such as spall or shell fragments. Gun shot wounds inside tanks were almost certainly not caused by small arms.)
Gun shot wounds	See GSW
HC	Hollow charge (ammunition - now known as HEAT or shaped charge ammunition)

HE	High explosive (ammunition)
HLI	Highland Light Infantry. An infantry regiment in the British Army
HMG	Heavy machine gun
how	howitzer
HQ	Headquarters
hrs	hours
HVAP	High velocity armour piercing (a type of ammunition in which a dense strong core usually of Tungsten Carbide was surrounded by a light alloy shell to bring it up to bore size. The light alloy shell stayed attached to the core during the flight of the projectile. Known to the Germans in the war as "Pzgr 40", now as "AP 40" and to the British as "APCR" - Armour piercing composite rigid)
IG	Infantry gun (a short barrelled field gun usually of 75mm calibre)
IO	Intelligence officer
Ind	Indian
Inf	Infantry
infantry gun	a type of short barrelled field gun usually of 75mm calibre
Jap	Japanese
Jats	A regiment in the Indian Army.
Jg	Jaeger
Jiff	Indian soldiers fighting for the Japanese belonging to the Indian National Army (INA)
KNIGHTSBRIDGE	KNIGHTSBRIDGE Box was the defensive position at 382418 held by 201 Gds Bde and their supporting artillery. KNIGHTSBRIDGE Box was established long before the German attack on the night of 26/27 May 42 and was evacuated on 14 May 42.
KRRC	Kings Royal Rifle Corps
LAA	Light anti aircraft
LAD	Light aid detachment. A tank repair unit, another name for an LRS
LAW	Light anti-tank weapon
Lieut	Lieutenant
LMG	Light machine gun

LRS	Light repair section. A tank repair unit, another name for an LAD
Lt	Lieutenant
Lt Col	Lieutenant Colonel
Lt tank	British designed light tank. Probably Mk VI.
Maj	Major
Med	Medium
MEF	Middle Eastern Forces (the command that in May 1942 included Egypt, Libya, Palestine, Iraq and Persia - Iran was called Persia at the time)
MG	Machine gun
MMG	Medium machine gun
MO	Medical officer
MORU	Military Operational Research Unit (a few years after the Second World War MORU was renamed AORG - Army Operational Research Group. There was another entirely separate organisation called Army Operational Research Group in the Second World War.)
MRC	Medical Research Council
MRS	Medical Research Section
Ms	Mile stone (on a road) - these were used as reference points
nala	an alternate spelling of "nullah"
nullah	a gully or ditch
OC	Officer commanding
offr	Officer
OP	Observation post
OR	Other rank
ORG	Operational Research Group
ORS	Operational Research Section. 1 ORS served in Italy, 2 ORS in North West Europe.
Pln	Platoon
Pt	Point (on a map) - in the war diaries of May and June 1942 points are referred to as for instance Pt 230 and B.230 almost interchangeably. Points are normally spot heights on maps.
PW	Prisoner of war
Pz	Panzerkampfwagen (German tank), as in Pz Mk III

Pzgr 40	The German term for HVAP ammunition
rds	rounds
RA	Royal Artillery
RAC	Royal Armoured Corps
RAMC	Royal Army Medical Corps
RCAMC	Royal Canadian Army Medical Corps
RCS	Royal Corps of Signals
RE	Royal Engineers
regimental gun	a type of field gun
Regt	Regiment
REME	Royal Electrical and Mechanical Engineers
RGH	Royal Gloucestershire Hussars
RHA	Royal Horse Artillery
RHQ	Regimental Headquarters
RMO	Regimental Medical Officer
RT	Radio telegraphy - this was the name given to two way radio communication in which people spoke into microphones instead of transmitting Morse code. In 1942, RT did not work in the desert at night due to atmospheric conditions (source - Lt Gen Norrie).
RTR	Royal Tank Regiment
SA	Small arm(s) (rifle calibre weapons)
SAA	Small arms ammunition
SAP	Semi-armour piercing (an armour piercing shell, sometimes called APHE)
SEAC	South East Asia Command
sec	section
scoop	a non-penetrating hit on a tank
SD 5	a military research organisation that investigated the effectiveness of weapons. SD 5 was later renamed "Weapons Technical Staff". There was an SD 5 attached to GHQ MEF
sponson	the part of the hull of an M3 Lee or Grant tank which held the 75mm gun. Note that the 75mm gun had a limited traverse in the sponson.
Sigs	Signals
SP	Self propelled

Sqn	Squadron
start line	the line at which troops should start their attack. Troops normally form up at the forming up point (FUP), advance to the start line (SL) and attack at Z Hour. The attack is made along the line of the centre line.
Tac	Tactical
TDR	Tank delivery regiment
TDS	Tank delivery squadron
Trigh	road or track
tp	troop
wadi	a dry stream bed
WT	Wireless telegraphy - similar to radio but using Morse (or some other) code instead of speaking. Compared with RT. WT had two advantages. WT worked at night in the desert. RT did not. WT had much longer range, transmissions made in Palestine could be picked up near Tobruk.
Z Hour	the time at which an attack should start. Troops normally cross their start line at Z Hour. Sometimes called "H Hour". See start line
2ic	Second in command
2/Lt	Second Lieutenant
7 H	7 Hussars
8 H	8 Kings Royal Irish Hussars
8 KRIH	8 Kings Royal Irish Hussars
9 L	9 Lancers
10 H	10 Hussars
2pr	2 pounder tank or ATk gun
6pr	6 pounder tank or ATk gun
17pr	17 pounder ATk gun
25pr	25pr gun/howitzer
?	In some fields a question mark has been placed after specific pieces of information. This indicates uncertainty. For instance the question mark in "AP? penetration" indicates that it is uncertain that the projectile was armour piercing.

Note that code names have been written entirely in capitals, for instance "SMOKE".

## **Disk Contents**

In the two wallets are five 3.5" floppy disks, containing dBase III plus files.

Disk 1 contains Crewinj.dbt

- Crewinj.dbf
- TkCrV1p1.dbt
- TkCrV1p1.dbf

Disk 2 contains TkCrV2p2.dbt

- TkCrV2p2.dbf
- TkCrV2p3.dbt
- TkCrV2p3.dbf

Disk 3 contains TkCrV2p4.dbt

- TkCrV2p4.dbf
- TkCrV2p5.dbt
- ~TkCrV2p5.dbf

Disk 4 contains TkCrV3p2.dbt

- TkCrV3p2.dbf
- TkCrV3p3.dbt
- TkCrV3p3.dbf

Disk 5 contains TkCrV3p4.dbt

- TkCrV3p4.dbf
- TkCrV3p5.dbt
- TkCrV3p5.dbf
- TkCrV4p1.dbt
- TkCrV4p1.dbf

## **Instructions for Reconstituting Data-Base**

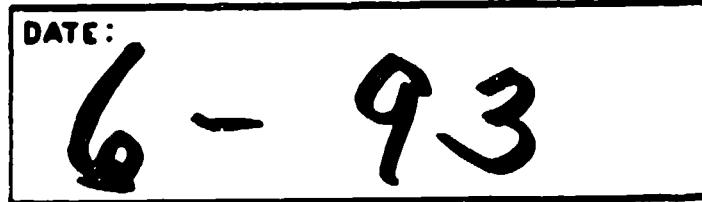
The data-base consists of the following four files which are described in paragraphs 13 to 20:

- TkCrInjs.dbt
- TkCrInjs.dbf
- Crewinj.dbt
- Crewinj.dbf

The "Crewinj" files are on Disc 1. The "TkCrInjs" files have been divided so as to fit onto floppy discs. To reconstitute the "TkCrInjs" files the user should obey the following instructions. (It has been assumed that the user is familiar with dBase III plus.)

1. Ensure that at least 3 Mb of hard disc is free.
2. Run dBase III plus.
3. Insert Disk 1.
4. USE B:TkCrV1p1
5. COPY TO TkCrInjs
6. USE TkCrInjs
7. Eject Disk 1, insert Disk 2.
8. APPEND FROM B:TkCrV2p2
9. APPEND FROM B:TkCrV2p3
10. Eject Disk 2, insert Disk 3.
11. APPEND FROM B:TkCrV2p4
12. APPEND FROM B:TkCrV2p5
13. Eject Disk 3, insert Disk 4.
14. APPEND FROM B:TkCrV3p2
15. APPEND FROM B:TkCrV3p3
16. Eject Disk 4, insert Disk 5.
17. APPEND FROM B:TkCrV3p4
18. APPEND FROM B:TkCrV3p5
19. APPEND FROM B:TkCrV4p1

**END**  
**FILMED**



**DTIC**